

Fig. 1 SiO₂ thickness as a function of number of ALD cycles. All data of the SiO₂ thickness on HfO₂, TiO₂, Al₂O₃, and SiO₂ layers as a function of ALD cycle satisfied the linear relationship. The growth per cycle (GPC) value of the SiO₂ film was increased in the following order: SiO₂ (0.036 nm/cycle) < Al₂O₃ (0.090) < TiO₂ (0.11) < HfO₂ (0.13).

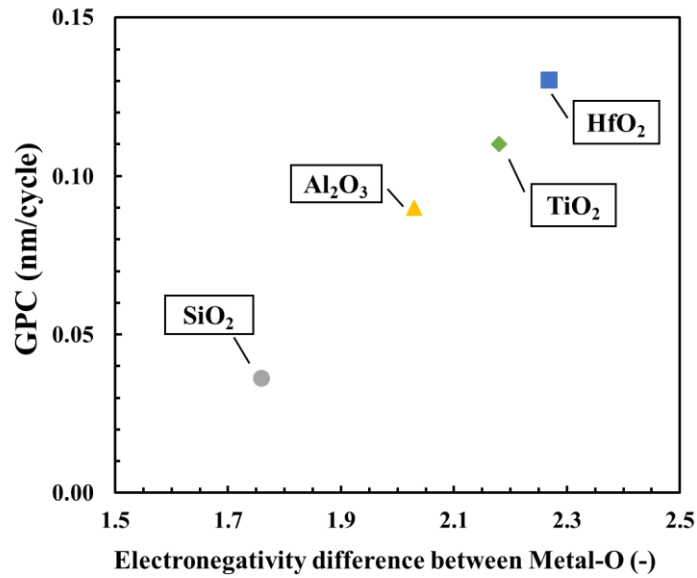


Fig. 2 The growth per cycle of the SiO₂ film as a function of electronegativity difference between Metal-O. This result correlated the GPC with the electronegativity difference of Metal-O.